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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/782,358	02/14/2001	Cristian Demetrescu	19-17-11-4-18	7819

22046 7590 07/22/2004

LUCENT TECHNOLOGIES INC.  
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EXAMINER

LERNER, MARTIN

ART UNIT PAPER NUMBER

2654

DATE MAILED: 07/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/782,358	<b>Applicant(s)</b> DEMETRESCU ET AL.	
	<b>Examiner</b> Martin Lerner	<b>Art Unit</b> 2654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1 to 10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 to 10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>2/01 &amp; 1/03</u> . | 6) <input type="checkbox"/> Other: ____  |

## **DETAILED ACTION**

### ***Priority***

1. Acknowledgment is made of Applicants' claim for foreign priority based on an Application filed in the European Patent Office on 16 February 2000. It is noted, however, that Applicants have not filed a certified copy of the European Application as required by 35 U.S.C. 119(b).

### ***Specification***

2. The disclosure is objected to because of the following informalities:

On page 6, line 30; on page 7, line 16 (two occurrences); on page 7, lines 19, 20, 22, 23, and 24; and on page 8, line 5, "codes" should be ~~—codec—~~.

On page 8, line 3, "tikes" should be ~~—takes—~~.

On page 9, line 14, "ion" should be deleted.

On page 10, line 16, "with" should be inserted after "consistent".

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless —

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the

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applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 2, 4 to 7, and 9 to 10 are rejected under 35 U.S.C. 102(e) as being anticipated by *DeMartin et al.*

Regarding independent claims 1 and 9, *DeMartin et al.* discloses a method and device for dynamic adaptation of data/channel coding in wireless communications, comprising:

“means for receiving a signal from the other device” – Mobile Station (MS) 11 and Base Station (BS) 13 each have a transmitter, a receiver, and an antenna for transmitting and receiving frames 21, 23 (column 3, lines 18 to 47: Figure 1);

“means for monitoring the condition of the received signal” – dynamic adaptation of speech/channel coding to the varying conditions of wireless channels in a cellular environment is presented (column 1, lines 65 to 67); down-link channel analyzer 39 in Mobile Station (MS) 11 receives metrics from demodulator 37 and equalizer 38 as to the condition of the received signal in the channel (column 4, lines 1 to 8: Figure 2); maximum likelihood equalizer 43 in Base Station (BS) 13 receives the signal from demodulator 41 and provides metrics as to the condition of the received signal in the channel (column 4, lines 31 to 48: Figure 3); a suitable average of the soft-values is a good estimator of the current Carrier to Interference (C/I) Ratio of the channel, a parameter which is directly connected to the amount of errors introduced by the channel (column 4, line 48 to column 5, line 13);

"means, responsive to a change in the condition of the received signal, for determining a new mode of operation of a transmission codec" – the up-link and down-link codec modes are dynamically changed to account for the estimated error rates on the up-link and down-link (column 2, lines 8 to 17); in GSM AMR, there are two channel modes, full rate or half rate; for a bad channel, the codec mode is Mode 0 and the source coding rate for speech is 7.45 Kb/sec; for a good channel, the codec mode is Mode 1 and the source encoding rate for speech is 11.85 Kb/sec (column 3, lines 48 to 65); in the Mobile Station (MS) 11, the up-link input speech is encoded with the up-link codec mode in encoder 31, where the channel encoder is operated at the codec up-link mode received via the down-link from the Base Station (BS) 13 (column 3, line 66 to column 4, line 8: Figure 2); in the Base Station (BS) 13, the equalizer 43 makes a decision as to the codec mode, and passes the result to channel decoder 45; metrics from demodulator 41 and equalizer 43 provide a level of confidence to choose the up-link mode at up-link mode select 47 (column 4, lines 31 to 48: Figure 3);

"means for transmitting the new mode of operation of the transmission codec to the other device responsive to the change in condition of the received signal" – a codec command is sent via the down-link, that is from Base Station (BS) 13 to Mobile Station (MS) 11; the codec command is the codec mode that the Mobile Station (MS) encoder is asked to use (column 2, lines 19 to 28); in the Mobile Station (MS) 11, the up-link input speech is encoded with the up-link codec mode in encoder 31, where the channel encoder is operated at the codec up-link mode received via the down-link from the Base Station 13 (column 3, line 66 to column 4, line 8: Figure 2); in the Base Station (BS) 13,

the receiver recognizes the header 21*b* code and knows the codec mode to use for the frame (column 4, lines 36 to 39: Figure 3).

Regarding claims 2 and 10, *DeMartin et al.* discloses dynamic switching requires the transmission of two different kinds of in-band information (column 2, lines 19 to 28); the in-band information for both directions is sent every frame (20 ms) (column 2, lines 33 to 37); a moving average is a good estimator of the current Carrier to Interference (C/I) Ratio, and the moving average filter averages over 40 frames to determine the codec mode (column 4, lines 48 to 61); thus, the "minimum period" for changing the codec mode is somewhere between one frame (20 ms) and 40 frames (800 ms).

Regarding claim 4, *DeMartin et al.* discloses dynamic switching requires the transmission of in-band information of a codec command sent via the down-link, that is from Base Station (BS) 13 to Mobile Station (MS) 11; the codec command is the codec mode that the Mobile Station (MS) 11 is asked to use (column 2, lines 19 to 28).

Regarding claim 5, *DeMartin et al.* discloses that the Mobile Station (MS) 11 has both a speech encoder 31 and a speech decoder 34 (Figure 2); the Base Station (BS) 13 has both a speech encoder 53 and a speech decoder 49 (Figure 3); thus, both ends of the communication have a transmission codec.

Regarding claim 6, *DeMartin et al.* discloses dynamic switching requires the transmission of in-band information of a codec command sent via the down-link, that is from Base Station (BS) 13 to Mobile Station (MS) 11; the codec command is the codec mode that the Mobile Station (MS) 11 is asked to use (column 2, lines 19 to 28; column 3, lines 34 to 37); thus, the Base Station (BS) 13 is "one end of the communication link"

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that "forwards a command to change the codec mode of operation", and the Mobile Station (MS) 11 is "the other end of the communication link"; the Base Station (BS) 13 recognizes a header 21b code and knows the codec mode to use for the frame, but the equalizer 43 makes a decision as to whether a logic 1 or 0 is to be used by channel decoder 45 (column 4, lines 36 to 41: Figure 3); thus, the header 21b received from the Mobile Station (MS) 11 is in the nature of a "request to change the codec mode of operation".

Regarding claim 7, *DeMartin et al.* discloses dynamic adaptation of speech/channel coding to varying conditions of wireless channels in a cellular environment for up-links and down-links ("the communication link is a link in a mobile communications system") (column 1, lines 65 to 67: Figures 2 to 4).

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over *DeMartin et al.* in view of *Biedermann* ('292).

*DeMartin et al.* discloses a "minimum period" for changing the codec mode is somewhere between a transmission time for one frame of 20 ms (column 2, lines 33 to 37) and an averaging period for determining the current Carrier to Interference (C/I)

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Ratio of the channel for 40 frames, or 800 ms. However, *DeMartin et al.* does not expressly disclose a minimum period for changing the codec mode of 160 ms, although 160 ms is within the range from 20 ms to 800 ms. *Biedermann ('292)* suggests a telecommunication interface for sending data messages via radio channels in TDMA, wherein a time sequence from the base station RFP to the mobile part RPP is defined by a multi-timeframe MZR that occurs every 160 ms and comprises 16 timeframes ZR having a respective time duration of 10 ms. (Column 3, Lines 29 to 43: Figures 1 and 2) Moreover, Applicants' Specification, Page 8, Lines 11 to 13, admits that it is conventional in GSM to send the codec mode request/command every 160 ms. Given the suggestion of *DeMartin et al.* to change the codec mode in a period from 20 ms to 800 ms; the teaching of *Biedermann ('292)* that time frames in TDMA are sent every 160 ms; and Applicants' admission that 160 ms is conventional for a codec change request in GSM, it would have been obvious to one having ordinary skill in the art to set a minimum period of 160 ms for changing the codec mode in *DeMartin et al.* because 160 ms is a conventional standard in TDMA as suggested by *Biedermann ('292)*.

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over *DeMartin et al.* in view of *Lubin et al.*

*DeMartin et al.* discloses a system for data/channel coding, where a cellular Mobile Station (MS) 11 and a transmit/receive control switch (TR) transmit packet frames 21 (column 3, lines 18 to 23: Figure 1), but does not expressly disclose a packet switching system. However, it is well known that cellular communication systems



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transmit data via packet switched networks. *Lubin et al.* teaches a digital wireless communication system and network called Cellular Digital Packet Data (CDPD) that provides a packet-switched data service for mobile subscribers. (Column 6, Line 62 to Column 7, Line 14) The objective is to combine the capabilities of a voice cellular telephone and a wireless fax-modem to achieve mobility in the transmission of digital and facsimile information. (Column 3, Line 60 to Column 4, Line 12) It would have been obvious to one having ordinary skill in the art to integrate a packet-switching system as taught by *Lubin et al.* into the method and system for dynamic adaptation of data/channel coding in wireless communications of *DeMartin et al.* for the purpose of combining the capabilities of a voice cellular telephone and a wireless fax-modem to achieve mobility in the transmission of digital and facsimile information.

### ***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to Applicants' disclosure.

Biedermann ('268) discloses related art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin Lerner whose telephone number is (703) 308-9064. The examiner can normally be reached on 8:30 AM to 6:00 PM Monday to Thursday.

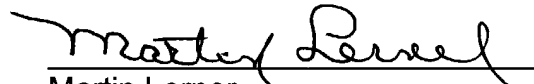
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (703) 305-9645. The fax phone

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number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ML  
7/13/04

A handwritten signature in black ink, appearing to read "Martin Lerner", written over a horizontal line.

Martin Lerner  
Examiner  
Group Art Unit 2654